

# Diplexer Formed in Multi-Layered Substrate.

## Abstract

A lumped-element diplexer formed in a multi-layered substrate includes a high-pass filter circuit, a low-pass filter circuit, and a ground plane, the elements of the filter circuits being disposed as follows: a first capacitor plate on a first layer of the substrate connected to a first port and a first inductor plate on a third layer, a second capacitor plate on a second layer of the substrate connected to the first inductor plate and a third capacitor plate on a fourth layer, the third capacitor plate in turn being connected to a second port. A fourth capacitor plate on a fifth layer of the substrate is connected to a second inductor plate on a seventh layer, the second inductor plate in turn being connected to the ground plane on a zeroth layer. A fifth capacitor plate on a sixth layer of the substrate is connected to a third port.